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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,025	10/04/2000	Toru Koizumi	35.C14850	5647

5514 7590 06/09/2003

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EXAMINER

KAO, CHIH CHENG G

ART UNIT PAPER NUMBER

2882

DATE MAILED: 06/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/678,025

Applicant(s)

KOIZUMI, TORU

Examiner

Chih-Cheng Glen Kao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 9-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 9-15 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on 2/20/03. These drawings are acceptable.

Claim Objections

2. Claim 12 is objected to because of the following informalities. In claim 12, line 2, "device according to any one of claims 1" is recited. This objection may be obviated by replacing "any one of claims" with - -claim- -. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kochi et al. (US Patent 6,188,094 B1) in view of Goto et al. (US Patent 5237423) and Street (US Patent 5831258).

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4. With regards to claims 1 and 2, Kochi et al. discloses a solid-state image pickup device (Fig. 7) with an optical system (Fig. 1) comprising at least one unit cell in a two-dimensional matrix having a photoelectric conversion portion (Fig. 7, #901), an amplifying means (Fig. 7, #903) to send a noise and optical signal (Fig. 7, #906), a transfer means with a first common line (Fig. 7, #911 and " $\phi TX(n+1)$ "), a reset means (Fig. 7, #902) with a switch to provide an ON-state voltage to the reset (Fig. 9, portion related to " T_2 "), a selecting means with a second common line (Fig. 7, #904 and " $\phi SEL(n+1)$ "), and a power line (Fig. 7, power to #902 and 904), and a noise and optical signal read out in that order from the signal output line and the difference is determined (col. 7, lines 30-38 and 45-53).

However, Kochi et al. does not disclose wherein one common line performs two different functions of signal output and selecting, transferring, or resetting in one unit cell or two unit cells operating in time series fashion nor a common power line nor wherein during selection.

Goto et al. teaches wherein one common line performs between two unit cells operating in time series fashion (col. 3, lines 53-57). Street teaches one common line performing two different functions of signal output and selecting, transferring or resetting in one unit cell or two unit cells (Fig. 2, #210, 218 and 204).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the one common line of Goto et al., with the device of Kochi et al., since one would be motivated to get the image output from each photodiode using just one line to conserve wires, costs, and space as implied from Goto et al. (col. 3, lines 34-57, and Fig. 1).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the one common line of different functions of Street with the device

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of Kochi et al., since one would be motivated to use this to perform two functions simultaneously as implied from Street (col. 5, lines 21-30).

5. With regards to claim 9, Kochi et al. further discloses wherein during a period in which selecting means is turned on, a noise and optical signal are read out from the signal output line (col. 7, lines 20-41).

6. With regards to claim 13, Kochi et al. further discloses wherein the photoelectric conversion portion, amplifying means, transfer means, reset means, and selecting means are all of the same conductivity type (col. 3, lines 39-42, and Figure 7).

7. Claims 3, 10, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kochi et al. in view of Goto et al. and Street as respectively applied to claim 2 above, and further in view of Matsunaga et al. (US Patent 6091449).

8. With regards to claims 3 and 15, for purpose of being concise, Kochi et al. in view of Goto et al. and Street suggest a device as recited above.

However, Kochi et al. does not disclose each unit cell having a plurality of photoelectric conversion portions connected to a common amplifying transistor.

Matsunaga et al. teaches each unit cell having a plurality of photoelectric conversion portions connected to a common amplifying transistor (Fig. 7, #62a, 62b, and 64).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the plurality of photoelectric conversion portions of Matsunaga et al. with the suggested device of Kochi et al. in view of Goto et al. and Street, since one would be motivated to have a plurality of photoelectric conversion portions to reduce the area of a unit cell compared to the prior art by sharing circuits as implied from Matsunaga et al. (col. 9, lines 1-12).

9. With regards to claim 10, Kochi et al. further discloses wherein unit cells are arranged in a two-dimensional matrix (Fig. 7).

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kochi et al. in view of Goto et al. and Street as applied to claim 1 above, and further in view of Yonemoto (US patent 5894325).

Kochi et al. in view of Goto et al. and Street suggests a device as recited above.

However, Kochi et al. does not disclose a power line between two unit cells.

Yonemoto teaches a power line between two unit cells (Fig. 1, #14).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the power line of Yonemoto with the suggested device of Kochi et al. in view of Goto et al. and Street, since one would be motivated to have the power line to power all cells from just one source as shown in Figure 1 of Yonemoto.

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11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kochi et al. in view of Goto et al. and Street as applied to claim 1 above, and further in view of Ohba et al. (US Patent 4349743).

Kochi et al. in view of Goto et al. and Street suggests a device as recited above.

However, Kochi et al. does not disclose a signal processing circuit.

Ohba et al. teaches a signal processing circuit (col. 6, lines 45-49).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the signal processing circuit of Ohba et al. with the suggested device of Kochi et al. in view of Goto et al. and Street, since one would be motivated to have the signal processing circuit to further process electrical signals, such as for correcting black or white level voltage as shown by Ohba et al. (col. 6, lines 40-49).

12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kochi et al. in view of Goto et al. and Street as applied to claim 2 above, and further in view of Gowda et al. (US Patent 5898168).

Kochi et al. in view of Goto et al. and Street suggests a device as recited above.

However, Kochi et al. does not disclose a common line functioning as a selection and transfer control line.

Gowda et al. teaches a common line functioning as a selection and transfer control line (Fig. 3B, #22 and RSL_i, and col. 4, lines 20-28).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have a common line functioning as a selection and transfer control line of

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Gowda et al. with the suggested device of Kochi et al. in view of Goto et al. and Street, since one would be motivated to have this to eliminate the separate selection line as implied from Gowda et al. (col. 4, lines 20-28).

Response to Arguments

13. Applicant's arguments with respect to claims 1-3 and 9-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - Th (8 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



gk
May 29, 2003



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